

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently amended) A method of receiving packets comprising:
 setting a ~~first~~ early direct memory access (EDMA) and a ~~second~~ direct memory access (DMA) precondition to indicate when to begin copying at least one packet payload from a first buffer of an offload engine to a receive buffer of a host memory;
 receiving at least one packet at the offload engine from a network communication link,
 appending a packet payload of the at least one packet to the first buffer of the offload engine;
 determining whether the ~~first~~ EDMA precondition has been met based, at least in part, on a state of the first buffer;
 determining whether the ~~second~~ DMA precondition has been met based, at least in part, on the state of the first buffer;
 copying at least a portion of the first buffer of the offload engine to the receive buffer of the host memory if the ~~first~~ EDMA precondition has been met; and
 repeating the method until the ~~second~~ DMA precondition has been met.

2. (Currently amended) The method of claim 1 further comprising receiving another packet from the network communication link if the ~~second~~ DMA precondition has not been met.
3. (Original) The method of claim 1 further comprising increasing a count to offset future copies from the first buffer to the host memory.
4. (Currently amended) The method of claim 1 wherein said copying the at least a portion of the first buffer to the receive buffer comprises copying a portion of the packet payload.
5. (Currently amended) The method of claim 4, the method further comprising:
determining that at least one packet payload of the first buffer has been previously received, wherein said copying the at least a portion of the first buffer to the receive buffer comprises copying the portion of the packet payload as well as the at least one previously received packet payload of the first buffer.
6. (Original) The method of claim 1 wherein said copying the at least a portion of the first buffer of the offload engine to the receive buffer of the host memory comprises a DMA copy of the at least a portion of the first buffer and releasing the at least a portion of the first buffer.

7. (Currently amended) The method of claim 1 wherein the ~~first~~ EDMA precondition comprises a predetermined percentage of the first buffer of the offload engine being filled with payload data.
8. (Currently amended) The method of claim 1 wherein the ~~first~~ EDMA precondition comprises a predetermined number of bytes in the first buffer of the offload engine.
9. (Currently amended) The method of claim 1 wherein the ~~first~~ EDMA precondition comprises a predetermined time period having passed since said setting of the ~~first~~ EDMA precondition.
10. (Currently amended) A network offload engine comprising:
 - a first interface to receive packets from a network communication link;
 - a first buffer to store packet payloads of at least some of the received packets;
 - a second interface to a host memory to copy the packet payloads that are stored in the first buffer to a receive buffer in the host memory in response to a ~~first~~ an EDMA precondition;
 - logic to copy contents of the first buffer to a location in the receive buffer of the host memory in response to the ~~first~~ EDMA precondition being met, the logic to notify a host in response to meeting a ~~second~~ DMA precondition;
 - a count device to offset the location in the receive buffer where the contents of the first buffer are to be copied, the offset being relative to the received packet payloads that have already been copied from the first buffer to the receive buffer.

11. (Original) The network offload engine of claim 10 wherein the count device stores a number representing the number of bytes that have been copied from the first buffer to the receive buffer.

12. (Original) The network offload engine of claim 10 further comprising a direct memory access engine to copy payload data from the first buffer to the receive buffer.

13. (Original) The network offload engine of claim 10 wherein the network communication link comprises a cable for Ethernet communication.

14. (Currently amended) A system comprising:

a host processor to host applications for receiving packets;

a host memory having a receive buffer to store packet payload data received from a network communication link communicating with the host;

an unshielded twisted pair communication link to transmit packets; and

a network offload engine to receive the packet payload data in a first buffer, the network offload engine having an engine to copy the packet payload data in the first buffer to the receive buffer of the host memory independently of notification of the host processor and in response to the first buffer meeting a ~~first~~ EDMA precondition, the engine to notify the host processor in response to a ~~second~~ DMA precondition being met.

15. (Original) The system of claim 14 wherein the network offload engine further comprises a direct memory access engine for copying the packet payload data in the first buffer to the receive buffer.

16 (Original) The system of claim 14 wherein the unshielded twisted pair communication link comprises an Ethernet adapter.

17. (Currently amended) An article comprising:

a storage medium of a network adapter comprising machine-readable instructions stored thereon to:

set ~~a first~~ an EDMA and a ~~second~~ DMA precondition to copy received packets in a first buffer of a network offload engine of the network adapter to a receive buffer at a host memory in response to, at least in part, meeting the first precondition at the network adapter;

append a packet payload to the first buffer of the offload engine;

access with an engine of the offload engine a flag that indicates whether the ~~first~~ EDMA precondition has been met by said appending the packet payload to the first buffer of the offload engine;

access with the engine another flag that indicates whether the ~~second~~ DMA precondition has been met by the packet payload being appended to the first buffer in view of previous packet payloads that have been appended to the first buffer;

copy at least a portion of the first buffer of the offload engine to the receive buffer of the host memory in response to meeting the ~~first~~ EDMA precondition; and

repeat the method each time the ~~first~~ EDMA precondition has been met until meeting the ~~second~~ DMA precondition.

18. (Original) The article of claim 17 wherein the storage medium further comprises machine-readable instructions to increase a count when the at least a portion of the first buffer is copied to the receive buffer, the count to offset future copies from the first buffer to the receive buffer.

19. (Original) The article of claim 17 wherein the storage medium further comprises machine-readable instructions to copy the at least a portion of the first buffer to the receive buffer without notifying a host processor.

20. (Original) The article of claim 17 wherein the storage medium further comprises machine-readable instructions to receive packets at the first buffer.

21. (Currently amended) A method comprising:

setting a ~~first~~ an EDMA and a ~~second~~ DMA precondition in a system for receiving packets;

receiving packets of a network transmission at a network offload engine of the system;

copying at least a portion of the received packets to a host buffer without notifying a host processor in response to the system meeting the ~~first~~ EDMA precondition;

re-setting the ~~first~~ EDMA precondition;

repeating the method until meeting the ~~second~~ DMA precondition;

notifying the host that the ~~second~~ DMA precondition has been met; and
copying any remaining of the received packets in the network offload engine to the
host buffer after said notifying the host.

22. (Original) The method of claim 21 wherein said copying the at least a portion of the
received packets of the offload engine to the host buffer without notifying the host processor
comprises copying the at least a portion of the received packets prior to receiving all of the
packets of the network transmission.

23. (Original) The method of claim 21 wherein said receiving packets of the network transmission at the network offload engine comprises receiving packets at a first buffer of the network offload engine.